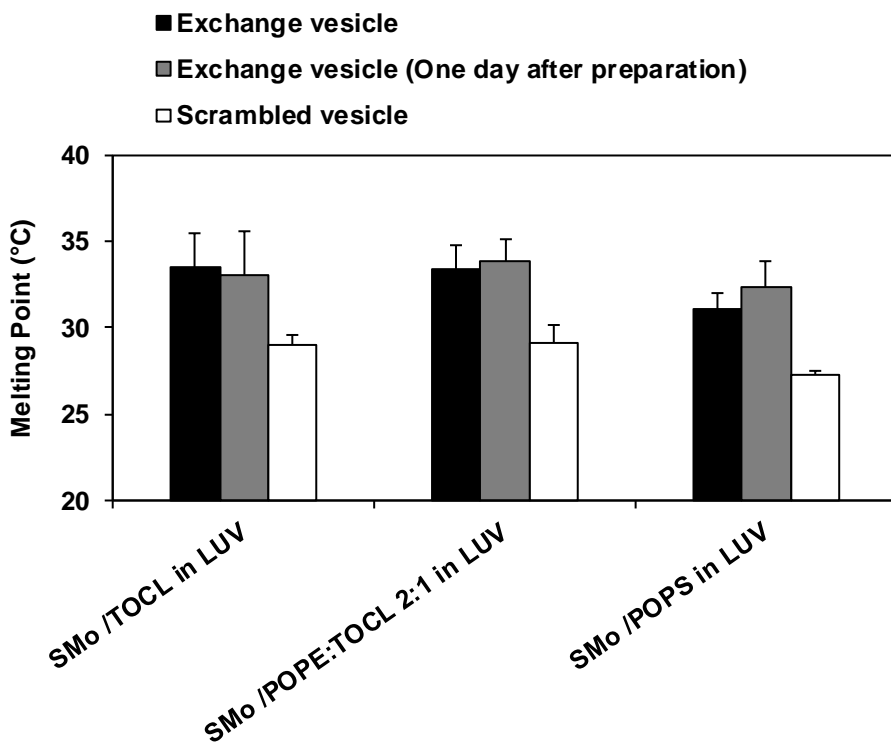


Supplemental Material for “The Dependence of Lipid Asymmetry Upon Polar Headgroup Structure” by Mijin Son and Erwin London

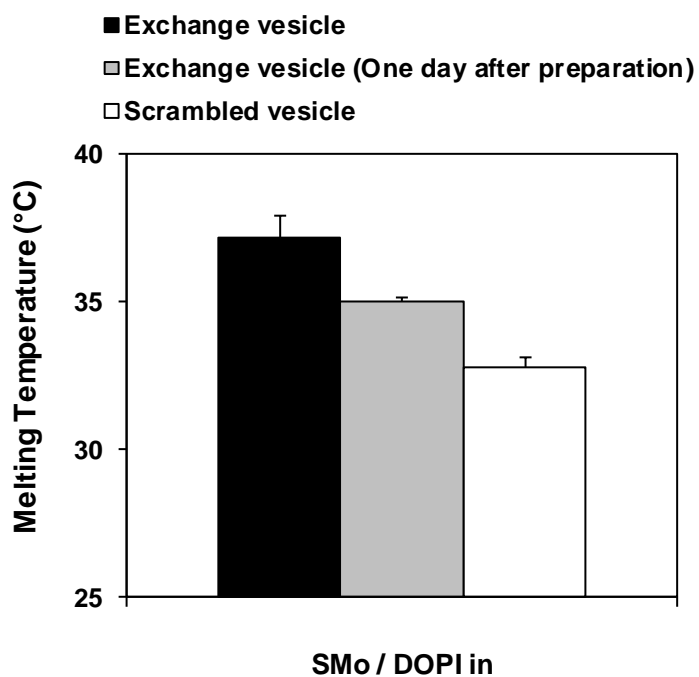
**Figure I. The gel to fluid melting midpoint ( $T_m$ ) of exchange and scrambled LUVs.**

(Black bars) Exchange LUV; (Gray bars) Exchange LUV one day after preparation; (white bars) Exchange LUV after scrambling. Lipid composition of exchange vesicles shown on x-axis. The steady-state DPH anisotropy measurements as a function of temperature were made on exchange LUV both immediately after preparation and after one day of incubation at room temperature. The average (mean) and S.D. from four or more preparations are shown.



**Figure II. The gel to fluid melting midpoint ( $T_m$ ) of exchange and scrambled SUVs prepared with DOPI.**

(Black bars) Exchange vesicles; (Gray bars) Exchange vesicles one day after preparation; (white bars) Exchange vesicles after scrambling. Lipid composition of exchange vesicles shown on x-axis. The steady-state DPH anisotropy measurements as a function of temperature were made on exchange vesicles both immediately after preparation and after one day of incubation at room temperature. The average (mean) and range of duplicates are shown.



**Figure III. SUV size.**

The size of exchange SUVs was determined by dynamic light scattering. Samples in which SM was substituted into the outer leaflet were collected from fraction 14 of a Sepharose CL4B column used to separate SUV from larger vesicles and then size was measured before (white bar) and after (grey bar) incubation at 70°C for 30 min. The average (mean) and range is shown for two independent preparations for POPE:TOCL and POPE:POPS.

